CLAIMS:

1. An electrically conducting lead comprising:

a body of relatively electrically insulative material; and

a relatively electrically conductive element extending through at least a portion of said insulative body in a wound arrangement;

wherein said electrically conductive element comprises a plurality of layers of electrical conductors with the longitudinal extent of each of said electrical conductors over said portion of the lead being substantially identical.

2. The electrically conducting lead of claim 1 wherein the wound arrangement of the electrically conductive element is a helically wound arrangement.

3. The electrically conducting lead of claim 1 wherein the electrically conductive element extends from a first end to a second end of the lead.

4. The electrically conducting lead of claim 3 wherein the longitudinal extent of each of said electrical conductors over the length of the lead from the first end to the second end is substantially identical.

5. The electrically conducting lead of claim 4 wherein the longitudinal extent of the electrical conductors over the length of the lead from the first end to the second end is identical.

6. The electrically conducting lead of claim 1 wherein the electrically conductive element extending through said portion of the insulative body is wound in an anticlockwise direction for a length of said portion and in a clockwise direction for a length of said portion, if looking at the lead from one of the ends of the lead.

7. The electrically conducting lead of claim 6 wherein the length of the conductive element that is wound in an anticlockwise manner is substantially equal to the length of the conductive element that is wound in a clockwise manner.

8. The electrically conducting lead of claim 7 wherein the length of the conductive element that is wound in an anticlockwise manner is equal to the length of the conductive element that is wound in a clockwise manner.

9. The electrically conducting lead of claim 7 wherein at the transition from anticlockwise to clockwise windings, the conductive element is folded back on itself.

10. The electrically conducting lead of claim 1 wherein the conductive element is wound in one direction for the length of said portion of the insulative body and further wherein the layer is twisted by 180° at a location along the length of the body.

11. The electrically conducting lead of claim 10 wherein the twist is at a midway point of the length of the wound conductive element in the lead.

12. The electrically conducting lead of claim 1 wherein each layer of the conductive element is comprised of a plurality of separate electrical conductors, with each layer having the same number of conductors as the other layers in the element.

13. The electrically conducting lead of claim 1 wherein each layer of the conductive element is comprised of a plurality of separate electrical conductors, with the number of conductors of at least one of the layers varying from the number in one, more or all of the other layers of the element.

14. The electrically conducting lead of claim 1 wherein the electrical conductors are made of platinum.

15. A method of manufacturing a lead according to claim 1 wherein the method comprises the step of:

winding a conductive element relative to and around an insulative body.

16. The method of claim 15 wherein the step of winding the conductive element comprises:

loading the conductive element in a spindle, with one end of the element attached to one end of the insulative body;

relatively turning the insulative body in one direction; and

causing the conductive element to exit the spindle and become wound around the insulative body.

17. The method of claim 16 wherein while the conductive element is caused to exit the spindle, the spindle is relatively moved longitudinally along the length of the insulative body.

18. The method of claim 17 wherein the spindle moves in one direction relatively around the insulative body, and at a mid point along the length of the insulative body, the direction of rotation of the insulative body with respect to the spindle is changed to an opposite direction so causing the conductive element to fold upon itself such that what was an inner layer of the conductive element becomes the outer layer and vice versa.

19. The method of claim 18 wherein following winding of the conductive element, the insulative body is coated in another layer of insulative material.

20. The method of claim 15 wherein the step of winding the conductive element comprises:

affixing the respective ends of the conductive element to respective ends of the insulative body;

positioning the spindle midway between the ends of the insulative body;

relatively rotating the insulative body with respect to the spindle; and

causing the conductive element to exit the spindle and become wound onto the insulative body.

21. The method of claim 20 wherein as the conductive element is wound onto the insulative body, the spindle moves relatively closer to the insulative body.

22. The method of claim 17 wherein the spindle moves in one direction relatively around the insulative body, and at a mid point along the length of the insulative body, the spindle is relatively rotated by 180° so causing the conductive element to twist such that what was previously the inner layer of the conductive element becomes the outer layer and what was previously the outer layer becomes the inner layer of the conductive element.

23. The method of claim 22 wherein following the formation of the twist in the conductive element, the insulative body continues to relatively rotate in the same direction to complete the winding.

24. An electrically conducting lead comprising:

a body of relatively electrically insulative material; and

a relatively electrically conductive element extending through at least a portion of said insulative body in a wound arrangement;

wherein said electrically conductive element comprises a plurality of layers of electrical conductors with the number of conductors of at least one of the layers varying from the number of conductors in at least one of the other layers of the element.

25. The electrically conducting lead of claim 24 wherein the number of conductors in said one of the layers varies from the number in more than one of the other layers of the element.

26. An electrically conducting lead comprising:

a body of relatively electrically insulative material; and

a relatively electrically conductive element extending through at least a portion of said insulative body in a helically wound arrangement;

wherein said electrically conductive element comprises a plurality of layers of electrical conductors, with each layer of electrical conductors being made up of a plurality of separate electrical conductors, with the position of each electrical conductor being constant with regard to its neighbour and the position of each layer of electrical conductors being constant with regard to its neighbouring layer over the length of said portion of said insulative body.

27. An electrically conducting lead comprising at least one wire set, each set comprising at least two electrically insulated wires extending across the set in a first direction and disposed substantially in a side-by-side relationship, wherein the set has an undulating form for at least a portion of its length defined by a plurality of ridges and troughs extending across the set in a direction that is at an angle to said first direction.

28. A tissue-stimulating prosthesis comprising at least one stimulator means that outputs electrical signals via an electrically conducting lead to an electrode array, the lead comprising at least one wire set connecting the stimulator means to the electrodes of the array, each set comprising at least two electrically insulated wires extending across the set in a first direction and disposed substantially in a side-by-side

relationship, wherein the stack has an undulating form for at least a portion of its length defined by a plurality of ridges and troughs extending across the set at an angle to said first direction.

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